

McPherson County Rural Development Site Analysis

A Study by
First District Association of Local Governments

Funded by the South Dakota Value Added Agriculture Subfund

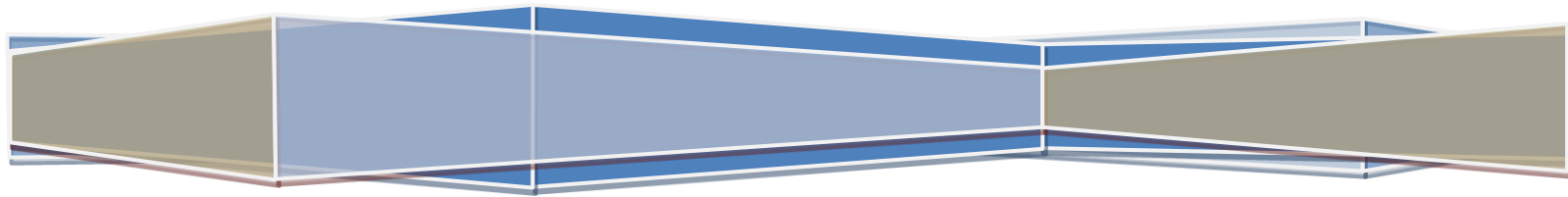


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Summary

Program History

As part of the South Dakota Department of Agriculture's (SDDA) efforts to enhance economic development opportunities and better support local control of development, the County Site Analysis Program (Program) was developed in the summer of 2013. The Program assists participating counties in identifying potential rural properties with site development opportunities. The analysis and subsequent report will provide local leaders with information and research-based resources to foster well informed decisions regarding the future of their respective regions. It also helps identify and plan for potential challenges that may arise should those opportunities be pursued.

In implementing the Program, SDDA is working closely with South Dakota's Planning and Development Districts. The First District Association of Local Governments (First District) and Planning and Development District III (District III) developed a methodology for a feasibility analysis that focuses on identifying locations for rural economic development. The methodology addresses the feasibility of locations for the development of concentrated animal feeding operations, agricultural processing and storage facilities, and other agriculturally-related commercial/industrial development. The analysis takes into consideration local zoning and State permitting requirements along with the availability of infrastructure necessary to accommodate certain rural economic development projects.

The identification of each prospective site's relative advantages and constraints provides decision-makers with useful information for assessing the development potential of each site. The information contained herein has the potential to streamline the marketing process thereby reducing timelines, financial expenditures and labor costs. Local governments, landowners, economic development groups and state agencies such as the Department of Agriculture or Governor's Office of Economic Development all benefit from the rural site development analysis. These entities now have access to a marketing tool based on proactive planning efforts. In addition, the report may assist local governments in updating their comprehensive plans, zoning ordinances and permitting procedures while also increasing local awareness of potential development opportunities.

Methodology

The analysis methodology developed for this study utilized an established set of criteria deemed critical to further development of the subject properties while specifically addressing the suitability of a site for either a concentrated animal feeding operation (CAFO) or an Agriculturally-related Industrial Development (AID). **Table 1** lists the site assessment criteria identified as being necessary in order to conduct analysis of the potential sites. Minimum thresholds for each criterion were utilized to establish a hierarchy classification of "Good", "Better" and "Best" sites. Those sites designated as "Best" sites were those not limited by any of the criteria considered. Sites not meeting the minimum criteria required of the "Best" sites were subsequently identified as "Good" or "Better".

Specific information regarding the Site Assessment Criteria and methodology utilized for developing the "Good", "Better", and "Best" hierarchy may be found in **Appendix I and II**, respectively.

Table 1: Site Assessment Criteria

CAFO/AID Criteria
Access to County and State Road Network
Proximity to Three-phase Electricity Supply
Proximity to Rural Water System
Capacity of Rural Water System
Location of Shallow Aquifer
Existing Zoning Districts/Land Use Plans
Buildable Parcel
County CAFO Zoning Setback Requirements (If applicable)*
Proximity to Rural Residences* & Communities
Proximity to Rail**

*CAFO Assessment Criteria Only

** AID Assessment Criteria Only

Limiting Factors

While this report focuses on the specific sites matching the site assessment criteria standards, it became apparent that each site also possesses its own unique set of site characteristics which present both advantages and constraints.

The analysis found that the primary limiting factor(s) in reviewing the development potential of properties within McPherson County for a “Better” or “Best” CAFO site development is the availability of quality and quantity potable water. The same is true with AID developments which also require a reliable source of not only high quality but also large quantities. Access to a centralized water source such as a rural water system was a piece of key criteria in the site analysis process. Access to a centralized water source such as rural water was a key criterion in the site analysis process. While many of the identified sites have access to rural water, the lack of an available supply of water resulted in the availability of water being identified as an impediment. It should also be noted that the analysis does not make the claim that the only sites for CAFO/AID development in McPherson County be relegated to the specific sites identified herein.

In addition to the availability of quality potable water, additional limiting factors such as access to County and State road networks, 3-Phase power lines, rail, and the county’s existing zoning ordinances/setback requirements limited the number of potential AID and CAFO sites.

The site assessment process was limited in scope to include undeveloped parcels and did not consider expansion of existing CAFOs or commercial/industrial uses. In addition to this limited scope, minimum values were utilized in ranking each site with regards to zoning requirements and infrastructure demands. No attempt was made to rank each site within the three identified classifications. The uniqueness of each criterion identified in Table 1 warrants a comprehensive review of the potential impact each may have upon a subject property. This study is intended as the first step of a multi-faceted development process potentially leading to more specific site evaluations such as Phase 1 Environmental Site Assessments (ESA), engineering plans, development cost analysis, etc.

Results

Identifying and evaluating potential sites for development is the first step in planning for economic development in rural McPherson County. The findings of this report will assist in determining the potential role each site may play in supporting economic development and should be considered when planning for future projects within McPherson County.

Utilizing Geographic Information System (GIS) technology, the First District Association of Local Governments identified **110** quarter sections that contained one or more sites within McPherson County that met the minimum site assessment standards of the CAFO analysis, **Table 2** and **169** quarter sections that contained one or more sites that met the minimum standards of the AID analysis, **Table 3**. These sites were in close proximity to infrastructure necessary to support the previously identified economic development activities.

The CAFO and AID Analysis Maps further detail High Water Use (HWU) and Low Water Use (LWU) CAFO and AID sites. HWU CAFO sites are those locations which require 150,000 gallons of water per day. This amount of water is necessary to support, for example, a 3,000 head dairy. LWU CAFO sites are those locations which require 30,000 gallons of water per day, a volume necessary to support either a 600 head dairy or 5,000 head sow operation. HWU AID sites are those locations which require water at levels necessary to support high water uses such as food processing or ethanol production. The water requirement for a HWU AID site is 410,000 gallons of water per day. This high water use is currently unable to be supported by the rural water system. Therefore, no sites were found to be acceptable for HWU AID. LWU AID sites are those locations which require water at levels necessary to support most agriculturally-related commercial/industrial development, 30,000 gallons per day. Within the identified quarter sections (**110 CAFO and 169 AID**), the analysis identified **103** High Water Use and **166** Low Water Use CAFO sites; whereas, there were **0** High Water Use and **364** Low Water Use AID sites. The following maps provide information at a township level regarding the number of “Good”, “Better” and “Best” CAFO and AID sites.

Table 2:
McPherson County CAFO Sites by Hierarchy Classification

CAFO Site Classification	Good Sites	Better Sites	Best Sites
Low Water CAFO	166	0	0
High Water CAFO	103	0	0

Table 3:
McPherson County AID Sites by Hierarchy Classification

AID Site Classification	Good Sites	Better Sites	Best Sites
Low Water AID	364	0	0
High Water AID	0	0	0

High Water Use
CAFO Development Sites
2017



Towns hips
City Limits

[illegible]

McPherson County

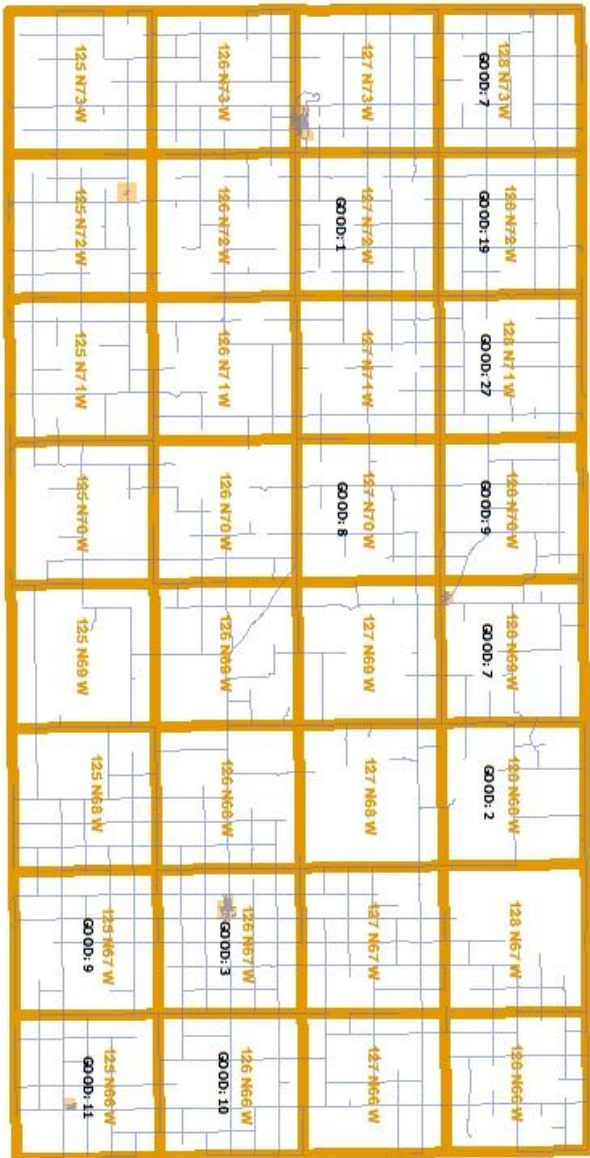
Low Water Use CAFO Development Sites 2017



Legend



TOWNSHIP	BEST	BETTER	GOOD
125N66W	0	0	11
125N67W	0	0	9
125N68W	0	0	0
125N69W	0	0	0
125N70W	0	0	0
125N71W	0	0	0
125N72W	0	0	0
125N73W	0	0	0
126N66W	0	0	10
126N67W	0	0	3
126N68W	0	0	0
126N69W	0	0	0
126N70W	0	0	0
126N71W	0	0	0
126N72W	0	0	0
126N73W	0	0	0
127N66W	0	0	0
127N67W	0	0	0
127N68W	0	0	0
127N69W	0	0	0
127N70W	0	0	8
127N71W	0	0	0
127N72W	0	0	1
127N73W	0	0	0
128N66W	0	0	0
128N67W	0	0	0
128N68W	0	0	2
128N69W	0	0	7
128N70W	0	0	9
128N71W	0	0	27
128N72W	0	0	19
128N73W	0	0	7



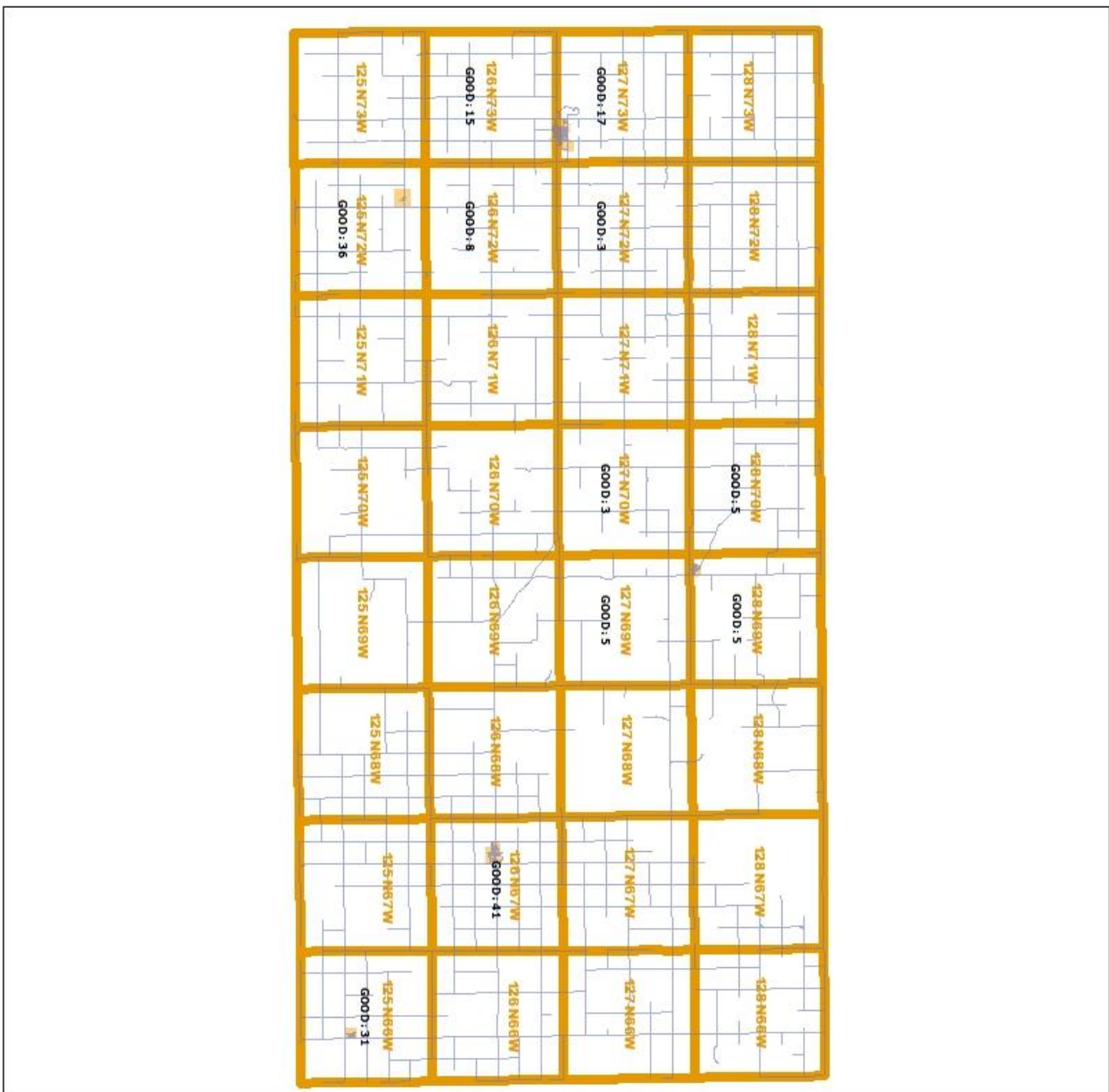
No High Water AID Map – Page Left Blank Intentionally

Low Water Use
AID Development Sites



Towns hips
City Limits

TOWN	SHIP	BEST	BETTER	GOOD
125M66W		0	0	31
125M67W	0	0	0	0
125M68W	0	0	0	0
125M69W	0	0	0	0
125M70W	0	0	0	0
125M71W	0	0	0	0
125M72W	0	0	0	36
125M73W	0	0	0	0
126M66W	0	0	0	0
126M67W	0	0	41	0
126M68W	0	0	0	0
126M69W	0	0	0	0
126M70W	0	0	0	0
126M71W	0	0	0	0
126M72W	0	0	8	0
126M73W	0	0	15	0
127M66W	0	0	0	0
127M67W	0	0	0	0
127M68W	0	0	0	0
127M69W	0	0	5	0
127M70W	0	0	3	0
127M71W	0	0	0	0
127M72W	0	0	3	0
127M73W	0	0	17	0
128M66W	0	0	0	0
128M67W	0	0	0	0
128M68W	0	0	0	0
128M69W	0	0	5	0
128M70W	0	0	5	0
128M71W	0	0	0	0
128M72W	0	0	0	0
128M73W	0	0	0	0



APPENDIX I: SITE ASSESSMENT CRITERIA

McPherson County Location Map



The developed methodology for this site analysis was carefully assembled using an established set of criteria regarded as crucial to further the development of subsequent properties, while specifically addressing the suitability of either a CAFO or an AID site.

Sites possessing all of the criteria identified as critical within the analysis will be those most sought by potential developers. The occurrence of these sites may be somewhat rare. Therefore, sites under consideration for either a CAFO or AID may meet the majority of criteria, but may also be lacking in a crucial specific area. Any sites not meeting all the criteria may be burdened with a limitation, thus, requiring more specific analysis. In these cases, the feasibility of developing the site is highly dependent upon the identified limitation(s).

A limiting condition could be the availability of water volume at an identified potential CAFO site. For example, the water condition for a 3,000-head dairy, versus the needs of a 5,000-head sow operation is approximately five times greater, but both could be subject to similar zoning regulations. In this situation, the lack of water at a volume necessary for a potential dairy site are more likely identified as a location for a swine facility.

It should be noted that neither this example nor the analysis explores potential alternatives to the absence of adequate rural water volume such as upsizing water distribution infrastructure or securing an alternative water source. These issues hold the potential to mitigate this constraint, thereby, facilitating the proposed development. Rather, the analysis recognizes upgrading infrastructure identified as necessary to support rural economic development projects may increase the number of developable sites within McPherson County. In other cases, failure to meet certain criteria, such as access to a quality road network, may result in a situation where development of the site becomes economically unfeasible.

The site assessment criteria, depending upon whether or not the site is for a CAFO or AID project, have been divided into the four major categories of **Land Use Regulations, Zoning, Environmental Constraints** and **Infrastructure**.

LAND USE REGULATIONS

Economic development planning in McPherson County must be conducted in concert with McPherson County's overall economic development goals. All development activities, including those specifically related to agriculture need to be accomplished within the parameters set forth in local and regional planning documents. Land use or development guidance is traditionally provided via local documents such as **comprehensive plans, zoning ordinances, policies, mission statements**, and other local economic development plans and initiatives. The analysis reviewed said documents to determine compliance with potential CAFO and AID development. The following is a synopsis of McPherson County's policies regarding CAFO and AID development.

Comprehensive Land Use Plan

The McPherson County Comprehensive Land Use Plan was developed in 2003. While the plan does not specifically address the need for an adequate supply of animal agricultural development, it does have several policies regarding animal development in the rural area of the county. The need to plan for CAFO and AID development is supported by the 2003 plan, which states:

Rural Area Guiding Policies, Goals and Objectives

- Every effort should be made to cluster residential uses and preserve the remaining areas for agricultural activities...
- Require the operation of animal confinements to be consistent with state and local laws and minimize odor from operations and manure application.
- Create major setbacks from animal confinement operations to mitigate smell concerns as well as other environmental concerns.

Commercial/Industrial Land Use

Although the rural area may experience pressure to provide locations for both commercial and industrial development, it is the intent of McPherson County to encourage commercial and industrial development to occur within municipalities and appropriately sited areas (Highway Intersections) in the rural area of the county, thereby preserving agricultural lands for agriculture production. The exception would be to consider commercial and industrial ventures that directly support agricultural production.

Commercial and Industrial Development Guiding Policies, Goals and Objectives

- Limit commercial and industrial in rural area. Allow the siting of agri-business activities at appropriate locations in rural area.
- Locate commercial uses for major highway interchanges. Such uses should be developed in a nodal pattern and geared to the support of highway users.
- Discourage strip development along transportation arteries, particularly those which serve as gateways to the municipalities.

Zoning

Ideally, economic developers seek sites that are zoned and eligible for specific uses. The need to pursue a zoning change or conditional use permit introduces an additional step in the development process thus increasing development timeframes and costs. These steps or requirements also increase the uncertainty of approval given zoning changes are referable. Another issue is the super majority voting requirement necessary for a County's Board of Adjustment to approve a conditional use permit.

While the rural areas of McPherson County are reserved for agricultural uses, certain agricultural uses may require a case by case review. Generally speaking, concentrated animal feeding operations are one of the aforementioned uses. It is important to emphasize agricultural producers must maintain flexibility in their operations. Grain farmers are now choosing to spread their expenses over more acres to generate a small return over more acres. Like grain farmers, numerous livestock producers are choosing to accept smaller gains over larger numbers of animals to remain solvent. McPherson County's leadership recognizes a diverse agricultural industry, relying on cash crop and animal agriculture, and promotes a sustainable, balanced agricultural economy. Concentrated animal feeding operations further these goals as they create a demand for crops grown in the area, provide fertilizer for surrounding land, and yield a raw product which is, in some cases, directly sold to local residents.

General CAFO Policies in the McPherson County Zoning Ordinance:

- All CAFOs are required to comply with applicable state and federal regulations.
- All manure spreading within McPherson County requires appropriate separation from property lines, rights-of-way, specific water features, and various different land uses.
- CAFOs of greater than 1,000 animal units should meet minimum requirements of the South Dakota DENR General Permit.

Concentrated Animal Feeding Operation Setbacks

McPherson County utilizes graduated setback requirements based upon the size of the CAFO. For the purpose of the analysis a 3,000 head dairy, or 4,290 animal units, example was used for identifying High Water Use CAFO sites. In McPherson County a 3,000 head dairy is required to observe a minimum setback of **5,960 feet** from established residences and **7,280 feet** from commercially-zoned properties and churches. As for setbacks from municipalities, the same 3,000 head dairy can be no closer than **15,840 feet**. This analysis also used a 5,000 head sow farrowing operation, or 3,250 animal units, for the purposes of a Low Water Use CAFO. The minimum setback from established residences for this type of operation is **4,960 feet** and **6,280 feet** from commercially-zoned properties and churches. The same swine operation would be required to be setback **15,840 feet** from municipalities. Both the dairy and swine operations would also be required to be located at least **500 feet** from lakes, rivers and streams considered fisheries. Further all CAFO's are **prohibited in a designated 100 year flood plain**.

GIS point data for churches and commercially-zoned area was not readily available, effectively removing them from the analysis. While it is possible that some of the sites identified in the analysis as "Good", "Better", or "Best" may be impacted by the location of a church or commercially-zoned area within 7,280 feet of a proposed CAFO site, it is believed this potential is minimal. All **166** sites in the analysis are currently zoned agricultural and each of the individual identified parcels, or at least a portion thereof, meet setback and lot area requirements.

Commercial/Industrial Zoning

There is very little concentrated or clustered commercial/industrial activity at the county level. McPherson County's commercial and industrial properties are generally singular and adjacent to County and State hard surface roads. Commercial and industrial activities located in rural areas are generally not conducive to municipal or populated locales.

Buildable Parcel

One criterion deemed necessary to facilitate development of either a CAFO or an AID was land area. A parcel of 40 buildable acres was set as the minimum for consideration within the analysis. In order to be considered, the property must have consisted of 40 contiguous acres and be able to support development upon all 40 acres. Parcels without 40 buildable acres were not considered in the final analysis.

Since McPherson County does not have a parcel data file that can be used by geographic information systems for analysis, the study was only able to identify quarter-sections containing potential development sites. As such, each quarter section identified in the analysis may contain more than one parcel and/or property owner.

Proximity to Communities

The AID analysis also considered sites within one mile of a community or at specific locations identified by McPherson County. This was done because many communities and counties have established growth plans for economic development within certain proximities of communities or at locations with existing infrastructure such as paved roads. Also since the parameters of the original AID analysis excluded all AID sites within counties without access to rail, the criterion of "proximity to a community" was

determined to be an adequate alternative for counties without rail facilities to identify potential AID sites.

ENVIRONMENTAL

If available, the location of shallow aquifers in relation to potential development sites was included in the analysis. In reviewing shallow aquifers, it is critical to note that they are included in the analysis for two distinct and very different reasons. Shallow aquifers may be utilized as a potential water source to support development. These same aquifers are also vulnerable to pollution due to their proximity to the surface and may be required to be protected via setbacks and development limitations.

At present, there is limited information regarding the occurrence and/or location of shallow aquifers in McPherson County. Further, McPherson County has not enacted or currently enforce aquifer protection or surface water regulations more restrictive than the State of South Dakota. Therefore, all sites within McPherson County were considered eligible for development.

Prior to or contingent upon acquiring a parcel for development it is assumed other environmental factors potentially affecting the property would be addressed via a Phase I Environmental Site Assessment or similar process. It is recommended that developers consider undertaking such an inquiry prior to executing a major commitment to a particular location.

INFRASTRUCTURE

The term infrastructure is broad in the context of property development includes essential services such as water, sewer, electrical, telecommunications, and roads. With regards to the rural site analysis process; access to quality roads, electrical capacity and water supply were deemed essential and identified as site selection criteria.

Transportation

Access to quality roads was identified as critical to determining the development potential of a parcel. The proximity of a potential development site to either a state or county road was established as one of the parameters in conducting the rural site analysis. In addition to utilizing the South Dakota Department of Transportation's road layer to identify roads and surface types, local experts were consulted to assist in identifying the road network. First District requested the McPherson County Highway Superintendent to identify segments of the county road system inadequate to support a CAFO or AID. Sites accessed only by township roads that were located further than one mile from the intersection of a County or State hard surface road network were eliminated from the analysis.

A potential development site's proximity to certain road types impacted its designation. Those parcels abutting hard surface roads were consistently ranked higher than those served by gravel roads. In reviewing CAFO and AID sites, parcels adjacent to a county or state hard surface road were designated "Better" or "Best" for transportation resources. Parcels adjacent to county gravel roads or within one mile of an intersection with a county/state road network were designated "Good" for CAFO sites. Parcels within one mile of an intersection with a county/state hard surface road network were designated "Good" for AID sites.

Access to rail was also considered to be an important factor in locating an AID site. Parcels adjacent to rail facilities were designated “Best”. Parcels within one-half mile of rail were designated “Better” and those parcels within one mile of rail were designated “Good”. In addition, the analysis also considered sites within one mile of a community or at locations identified by the County, with or without rail. Those parcels within one mile of a municipality or at locations identified by the County that met necessary requirements, except access to rail, were designated as “Good” and “Better”. Currently there is no rail service in McPherson County therefore access to rail was not considered.

Electric Supply

Access to 3-phase power was designated as a site characteristics criterion for both CAFO and AID development. The First District contacted FEM Electric Association to obtain the location and capacity of the 3-Phase infrastructure within McPherson County. FEM Electric Association is the primary provider of electricity in the rural area of McPherson County. All parcels whether for CAFO or AID development adjacent to a 3-phase power line were designated “Best” for electricity resources. Whereas, parcels within one mile of a three-phase power line were designated “Better” and those within two miles of a three-phase power line were designated “Good”.

Water Supply

The ability to secure specific information regarding a rural water system’s operations to include storage, distribution, and capacities proved to be the most complex and difficult component of the infrastructure analysis. Due to this, water resources were evaluated differently than transportation and electric infrastructure. While transportation and electric infrastructure were classified based primarily upon location and availability of three-phase power, the analysis of rural water systems first required the evaluation of the water system, specifically, each system’s supply and distribution capacities.

Development sites were then selected upon the proximity to water service. The classifications with regards to water supply and their respective criteria are as follows:

1. **“Best” Classification**

a. CAFO

- i. High Water Use CAFO Site- If the site was adjacent to or within an area where a rural water system had sufficient supply **and** distribution capacity to provide 150,000 gallons per day, the site area was designated as “Best” for water resources.
- ii. Low Water Use CAFO Site - If the site was adjacent to or within an area where a rural water system had sufficient supply **and** distribution capacity to provide 30,000 gallons per day, the site area was designated as “Best” for water resources.

b. AID

- i. High Water Use AID Site- If the site was adjacent to or within an area where a rural water system had sufficient supply and distribution capacity to provide 410,000 gallons per day, the site area was designated as “Best” for water resources.
- ii. Low Water Use AID Site- If the site was adjacent to or within an area where a rural water system had sufficient supply and distribution capacity to capacity to provide 30,000 gallons per day, the site area was designated as “Best” for water resources.

2. “Better” Classification

a. CAFO

- i. High Water Use CAFO Site- If the site was within an area where a rural water system had either a sufficient supply or distribution capacity to provide 150,000 gallons per day, the site area was designated as “Better” for water resources.
- ii. Low Water Use CAFO Site- If the site was within an area where a rural water system had either a sufficient supply or distribution capacity to provide thirty thousand 30,000 gallons per day, the site area was designated as “Better” for water resources.

b. AID

- i. High Water Use AID Site- If the site was within an area where a rural water system had sufficient supply or distribution capacity to provide 410,000 gallons per day, the site area was designated as “Better” for water resources.
- ii. Low Water Use AID Site- If the site was within an area where a rural water system had sufficient supply or distribution capacity to provide 30,000 gallons per day, the site area was designated as “Better” for water resources.

3. “Good” Classification

- a. In the event the Rural Water System has neither supply nor distribution capacity to serve either a Low or High Water Use CAFO or Low Water Use AID as defined above, the site area was designated as “Good” for water resources if it was located within 2 miles of a river, stream or lake designated by SD DENR Administrative Rule 74:51:02 and 74:51:03 which assigns the following uses to rivers streams and lakes – domestic water supply, stock watering waters, irrigation waters, commerce and industry waters, cold water and warm water permanent fish life propagation waters. The analysis does not make any conclusions regarding the quantity or quality of the water source identified in SD DENR Administrative Rule 74:51:02 and 74:51:03. Only that the potential for a water source may exist. The designation as “Good” for water resources was not applied to High Water Use AID sites due to the water volume requirements of High Water Use AID sites and the lack of available data regarding the capacity of shallow aquifers. Therefore, High Water Use AID sites without a water resource designation of “Better” or “Best” were deemed unusable for the purpose of the analysis.

The site analysis sought to address whether or not the Rural Water Systems serving the region had excess water treatment capacity (supply) and their ability to serve potential properties (distribution). In order to address the issue of supply, the First District Association of Local Governments contacted and requested location and capacity information from WEB Water Development Association (WEB) which provides water throughout McPherson County. WEB was asked to provide information regarding their available treated water capacity and to notate on maps those geographic areas where distribution capacity existed which could provide water volumes at 30,000, 150,000, and 410,000 gallons per day, respectively.

In a letter from WEB, the First District was informed that WEB currently has a system-wide moratorium on bulk member services. Therefore, WEB would not be able to provide water to any CAFO or AID site.

APPENDIX II: RESEARCH AND METHODOLOGY

This section describes the methodology utilized to evaluate the suitability of potential CAFO or AID development sites.

Step 1: Identification of Site Assessment Criteria

Table A1 lists the site assessment criteria identified as being necessary to conduct an analysis of potential sites. Utilizing these criteria as a guide, a variety of research methods were employed to compile the GIS data sets utilized within the analysis. Research efforts included the examination of local, regional, and state planning documents along with existing GIS data layers.

Table A1: Site Assessment Criteria

CAFO Criteria	AID Criteria
Access to County and State Road Network	Access to County and State Road Network
Proximity to Three-Phase Electricity Supply	Proximity to Three-Phase Electricity Supply
Proximity to Rural Water System	Proximity to Rural Water System
Capacity of Rural Water System	Capacity of Rural Water System
Location of Shallow Aquifer	Location of Shallow Aquifer
Buildable Parcel	Buildable Parcel
Existing Zoning Districts/Land Use Plans	Existing Zoning Districts/Land Use Plans
Proximity to Rural Residences & Communities	Proximity to Communities
County CAFO Zoning Setback Requirements	Proximity to Rail

Step 2: Evaluation of Site Assessment Criteria

After developing the data sets in **Table A1**, the analysis identified those site locations that:

1. Complied with zoning guidelines; and
2. Were in close proximity to infrastructure necessary to support either CAFO or AID development.

Concentrated Animal Feeding Operation (CAFO) Analysis

The GIS analysis removed all parcels within the County from consideration that:

1. Were not within one mile of a County or State road;
2. Were not within two miles of three-phase electric power;
3. Did not meet the setbacks from (county specific uses i.e. - existing residences, churches, businesses and commercially zoned areas);
4. Did not meet the setbacks from municipalities;
5. Did not meet the minimum standards for available water;
6. Did not contain a buildable footprint of at least 40 acres.

After applying the local zoning and buildable footprint requirements to each site, the availability of necessary infrastructure was incorporated into the analysis. The general location of available water, electric and road infrastructure was applied to the remaining sites to establish “Good”, “Better” and “Best” hierarchy of potential development sites. **Table A2** exhibits the minimum requirements necessary for a site to be classified as “Good”, “Better” or “Best” for **CAFO development**.

Table A2: CAFO Hierarchy Classification Requirements

Location Criteria	Description	Good	Better	Best
Roads	Site is <u>adjacent</u> to County/State hard surface road		X	X
	Site is within <u>one (1) mile</u> of a County/State road	X		
Water	Site is <u>adjacent</u> to rural water system area that has both supply <u>and</u> distribution capacity to provide 150,000 gallons per day or 30,000 gallons per day			X
	Site is <u>adjacent</u> to or within rural water system area that has either supply <u>or</u> distribution capacity to serve either 150,000 gallons per day or 30,000 gallons per day		X	
	Site is within <u>two (2) miles</u> of a river, stream or lake designated by SD DENR Administrative Rule 74:51:02 and 74:51:03 which assigns the following uses to rivers streams and lakes – domestic water supply, stock watering waters, irrigation waters, commerce and industry waters, cold water and warm water permanent fish life propagation waters	X		
Electricity	Site is <u>adjacent</u> to three-phase power			X
	Site is within <u>one (1) mile</u> of three-phase power		X	
	Site is within <u>two (2) miles</u> of three-phase power	X		
Zoning	Site meets county zoning setback requirements	X	X	X
Buildable Parcel	Site contains buildable area of at least forty (<u>40</u>) acres	X	X	X

Agriculturally-related Industrial Development (AID)

The GIS analysis removed all parcels within the County from consideration that:

1. Were not within one mile of a County or State hard surface road;
2. Were not within two miles of three-phase electric power;
3. Were not within one mile of rail, if applicable;
4. Were not within one mile of a community or at locations identified by the county
5. Did not meet the minimum standards for available water;
6. Did not contain a buildable footprint of at least 40 acres.

After applying the required location based site assessment criteria to each site, the availability of necessary infrastructure was incorporated into the analysis. The general location of available water, electric, rail and road infrastructure was applied to the remaining sites to establish “Good”, “Better” and “Best” hierarchy of potential development sites. **Table A3** exhibits the minimum requirements necessary for a site to be classified as “Good”, “Better” or “Best” **for AID development**.

Table A3: AID Hierarchy Classification Requirements

Location Criteria	Description	Good	Better	Best
Roads	Site is <u>adjacent</u> to County/State hard surface road		X	X
	Site is within <u>one (1) mile</u> of a County/State hard surface road	X		
Rail	Site is <u>adjacent</u> to rail facility			X
	Site is within one <u>half (½) mile</u> of rail facility		X	
	Site is within <u>one (1) mile</u> of rail facility	X		
Water	Site is <u>adjacent</u> to rural water system area that has both supply <u>and</u> distribution capacity to provide 410,000 gallons per day or 30,000 gallons per day			X
	Site is <u>adjacent</u> to or within rural water system area that has either supply <u>or</u> distribution capacity to serve either 410,000 gallons per day or 30,000 gallons per day		X	
	Site is within <u>two (2) miles</u> of a river, stream or lake designated by SD DENR Administrative Rule 74:51:02 and 74:51:03 which assigns the following uses to rivers streams and lakes – domestic water supply, stock watering waters, irrigation waters, commerce and industry waters, cold water and warm water permanent fish life propagation waters *	X		
Electricity	Site is <u>adjacent</u> to three-phase power			X
	Site is within <u>one (1) mile</u> of three-phase power		X	
	Site is within <u>two (2) miles</u> of three-phase power	X		
Proximity to Community	Site is within <u>one (1) mile</u> of community	X	X	
Buildable Parcel	Site contains buildable area of at least <u>forty (40) acres</u>	X	X	X

* Rivers, streams, and lakes designated by SD DENR Administrative Rule 74:51:02 and 74:51:03 are not used for High Water Use AID site analysis as they require specific Rural Water System Supply and Distribution Capacities

Step 3: Site Development Recommendations

Based on the analysis, **110** quarter sections contained **166** Low Water and **103** High Water sites that could be classified as Good, Better, or Best for CAFO development (**Table A4**) and **169** quarter sections that contained **364** sites which could be classified as Good, Better, or Best for AID development (**Table A5**).

While this study only identifies those sites that met the required criteria for the analysis, it should be noted that other sites within the county may be satisfactory for CAFO and AID development. A site not within the specified distance of a hard surfaced County or State road or that does not have desired infrastructure (rail, water, power) within close proximity does not necessarily negate its development potential.

Table A4:
McPherson County CAFO Sites by Hierarchy Classification

CAFO Site Classification	Good Sites	Better Sites	Best Sites
Low Water CAFO	166	0	0
High Water CAFO	103	0	0

Table A5:
McPherson County AID Sites by Hierarchy Classification

AID Site Classification	Good Sites	Better Sites	Best Sites
Low Water AID	364	0	0
High Water AID	0	0	0

APPENDIX 3: CONTACT INFORMATION

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